

Application No. 09/911279

56473US002

Remarks:

Claims 1-33 are pending. Claims 1, 5, 11, and 16 are currently amended. Claims 2-4, 6-10, 12-13, 15, 18-19, and 33 are canceled. Claims 14, 17, and 20-32 are original.

Response to Rejections

Claims 1-33 have been rejected under 35 USC § 103(a) as being unpatentable over Held (US 5,852,075); EP 0 974 626 A1; Caiger et al. (US 6,114,406); Breton et al. (US 5,863,320); and WO 99/07796; each in view of Savu et al. (WO 01/30873), and further in view of Adkins et al. (US 6,113,679). These rejections are considered moot because claim 1 has been amended and is the only independent claim.

Patentability of the Amended Claims

Claim 1 has been amended to include the limitations that the vehicle comprises polymerizable material, that the ink composition further comprises a photoinitiator and is radiation curable. The amended claim 1 is believed to be patentable over the above-cited references for the following reasons.

In the present application, the problem to be solved is foaming of ink jet inks. Examples 1-50 describe radiation-curable ink jet inks, and Example 50, in particular, describes foam stability when different surfactants are used; see Table 11 on page 54. The comparative example contains Fluorad FC-431 which is a non-ionic fluorosurfactant. The inventive examples contain the sulfonamide fluorosurfactants described in claim 1.

When faced with the problem of foaming with radiation-curable ink jet inks, one skilled in the art of these types of formulations would not be motivated to look for a solution in the art of aqueous-based ink jet inks. The primary references Held et al., EP 0 974 626 A1, Breton et al., and WO 99/07796 all exclusively relate to aqueous ink jet inks. Surfactants designed for use in aqueous-based formulations are typically not surfactants in non-aqueous solutions (that is, they don't form micelles or other tertiary structures in non-aqueous solutions).

As for Caiger et al., the only other primary reference, radiation curable ink compositions are described, and there is disclosure that suitable surfactants are preferably the non-ionic type with Fluorad FC430 given as an example. Fluorad FC430 and 431 (used in the comparative

Application No. 09/911279

56473US002


example in Table 11) are of the same family and have similar structures. Would one skilled in the art be motivated to use a fluoro surfactant just because one is used in Craiger et al.? It is respectfully submitted that the answer is 'no'. Also, it is not clear what problem Craiger et al. are trying to solve. Even if one were motivated by Craiger et al., one skilled in the art would not expect that sulfonamide fluoro surfactants would work over non-ionic types – the former are more polar and problems with their solubility in nonaqueous environments would be expected. This is evidenced by the fact that Savu et al. disclose that the surfactants of claim 1 are useful in water and other liquids (see page 17, line 25 to page 18, line 8 for limitations on the use of other liquids).

In view of the above, it is submitted that the application is in condition for allowance. Reconsideration of the application is requested.

Respectfully submitted,

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